

MATH 433/533
Homework for Section 1.2, substitute for #9
due 28 January 2009

- 1) Show that if you try to solve the differential equation (6), you arrive at the following expression for solutions y :

$$\frac{y-1}{y+1} = ke^{2x},$$

where k is a constant.

- 2) Show that if $k < 0$, then $|y| < 1$.
- 3) Show for all solutions y that we have
- a) $\lim_{x \rightarrow \infty} y = -1$
 - b) $\lim_{x \rightarrow -\infty} y = 1$